In The Claims:

The listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

1. (original) A method of forming an electronic device, the method comprising:

forming a first electrode;

forming a dielectric oxide layer on the first electrode wherein the dielectric oxide layer includes titanium, wherein a first portion of the dielectric oxide layer adjacent the first electrode has a first density of titanium, and wherein a second portion of the dielectric oxide layer opposite the first electrode has a second density of titanium different than the first density; and

forming a second electrode on the dielectric oxide layer so that the dielectric oxide layer is between the first and second electrodes.

2. (original) A method according to Claim 1 wherein the dielectric oxide layer further includes tantalum.

3. (original) A method according to Claim 1 wherein the dielectric oxide layer comprises tantalum titanium oxide.

4. (original) A method according to Claim 1 wherein forming the first electrode comprises forming the first electrode on a substrate so that the first electrode is between the substrate and the dielectric oxide layer.

5. (original) A method according to Claim 1 wherein the first density of titanium is greater than the second density of titanium.

6. (original) A method according to Claim 5 wherein the first density of titanium is in the range of approximately 0.1 to 15 percent.

7. (original) A method according to Claim 5 wherein the second density of titanium is in the range of approximately 0.001 to 3 percent.

8. (original) A method according to Claim 1 wherein the first density of titanium is less than the second density of titanium.

9. (original) A method according to Claim 8 wherein the first density of titanium is in the range of approximately 0.1 to 15 percent.

10. (original) A method according to Claim 8 wherein the second density of titanium is in the range of approximately 10 to 20 percent.

11. (original) A method according to Claim 1 wherein each of the first and second electrodes comprises at least one of doped polysilicon, metal, metal oxide, metal nitride, and/or metal oxynitride.

12. (original) A method according to Claim 1 further comprising:

forming a reaction suppressing layer between the first electrode and the dielectric layer.

13. (original) A method according to Claim 12 wherein the reaction suppressing layer comprises at least one of silicon nitride, silicon oxide, and/or silicon oxynitride.

14-62 (Canceled)

63. (previously presented) A method for manufacturing a semiconductor memory device, the method comprising:

(a) forming a lower electrode on an upper surface of a semiconductor substrate;

(b) forming a dielectric layer of a oxide film including titanium and tantalum, on an upper surface of the lower electrode; and

(c) forming an upper electrode on an upper surface of the dielectric layer,

wherein, in step (b), the density of titanium in the dielectric layer varies over the thickness of the dielectric layer;

wherein, in step (b), the density of titanium is adjusted to be 0.1 to 15 percent.

64-77 (Canceled)

78. (currently amended) A method for manufacturing a semiconductor memory device, the method comprising:

(a) forming a lower electrode on an upper surface of the semiconductor substrate;

(b) forming a reaction suppressing layer on an upper surface of the lower electrode;

(c) forming a first tantalum titanium oxide film on an upper surface of the reaction suppressing layer;

(d) forming a second tantalum titanium oxide film on an upper surface of the first tantalum titanium oxide film;

(e) applying a thermal process to the first and the second tantalum titanium oxide films under an oxygen atmosphere; and

(f) forming an upper electrode on an upper surface of the second tantalum titanium oxide film,

wherein a density of titanium is adjusted to be 0.1 to 15 percent when the first tantalum titanium oxide film is formed and a density of titanium of the second tantalum titanium oxide film is higher than ~~or equal to~~ the density of titanium of the first tantalum titanium oxide film.

79-94 (Canceled).

95. (original) A method of forming a dielectric oxide layer for an electronic device, the method comprising:

forming a first portion of the dielectric oxide layer having a first density of titanium; and

forming a second portion of the dielectric oxide layer having a second density of titanium different than the first density.

96. (original) A method according to Claim 95 wherein the dielectric oxide layer further includes tantalum.

97. (original) A method according to Claim 95 wherein the dielectric oxide layer comprises tantalum titanium oxide.

98. (previously presented) A method according to Claim 102 wherein the reaction suppressing layer comprises at least one of silicon nitride, silicon oxide, and/or silicon oxynitride.

99. (previously presented) A method according to Claim 102 wherein the dielectric oxide layer further includes tantalum.

100. (previously presented) A method according to Claim 102 wherein the dielectric oxide layer comprises tantalum titanium oxide.

101. (previously presented) A method according to Claim 102 wherein forming the first electrode comprises forming the first electrode on a substrate so that the first electrode is between the substrate and the reaction suppressing layer.

102. (previously presented) A method of forming an electronic device, the method comprising:

forming a first electrode;

forming a reaction suppressing layer on the first electrode;

forming a dielectric oxide layer on the reaction suppressing layer so that the reaction suppressing layer is between the first electrode and the dielectric oxide layer and wherein the dielectric oxide layer includes titanium wherein a first portion of the dielectric oxide layer adjacent the reaction suppressing layer has a first density of titanium, and wherein a second portion of the dielectric oxide layer opposite the reaction suppressing layer has a second density of titanium different than the first density; and

forming a second electrode on the dielectric oxide layer so that the dielectric oxide layer is between the reaction suppressing layer and the second electrode.

103. (previously presented) A method according to Claim 102 wherein the first density of titanium is greater than the second density of titanium.

104. (previously presented) A method according to Claim 103 wherein the first density of titanium is in the range of approximately 0.1 to 15 percent.

105. (previously presented) A method according to Claim 103 wherein the second density of titanium is in the range of approximately 0.001 to 3 percent.

106. (previously presented) A method according to Claim 102 wherein the first density of titanium is less than the second density of titanium.

107. (previously presented) A method according to Claim 106 wherein the first density of titanium is in the range of approximately 0.1 to 15 percent.

108. (previously presented) A method according to Claim 106 wherein the second density of titanium is in the range of approximately 10 to 20 percent.

109. (previously presented) A method according to Claim 102 wherein each of the first and second electrodes comprises at least one of doped polysilicon, metal, metal oxide, metal nitride, and/or metal oxynitride.

110. (canceled)

111. (previously presented) The method of claim 63, wherein the method further comprises forming a reaction suppressing layer for suppressing a reaction between the lower electrode and the dielectric layer, between steps (a) and (b).

112. (previously presented) The method of claim 111, wherein the reaction suppressing layer is one of a silicon nitride film, a silicon oxide film, and a silicon oxynitride film.

113. (previously presented) The method of claim 112, wherein the reaction suppressing layer is formed by applying one of a rapid thermal nitridation, a rapid thermal oxidation, and a combination thereof to a surface of the lower electrode.

114. (previously presented) The method of claim 112, wherein the reaction suppressing layer is formed by chemical vapor deposition.

115. (previously presented) The method of claim 63, wherein step (b) further comprises:

separately supplying a titanium precursor, a tantalum precursor, and oxygen gas into a reactor; and

reacting the titanium precursor, the tantalum precursor, and the oxygen gas with each other within the reactor.

116. (previously presented) The method of claim 115, wherein the tantalum precursor is one of a metal alkoxide such as $Ta(OC_2H_5)_5$, an organometalic such as a metal beta deketonate, and a metal halide such as $TaCl_5$.

117. (previously presented) The method of claim 115, wherein the titanium precursor is a compound such as one of $Ti(OCH(CH_3)_2)_4$, $Ti(OC_2H_5)_4$, $TiCl_4$, and a tetrakis-dimethylamido-titanium (TDMAT).

118. (currently amended) The method of claim 63, wherein, in step (b), a tantalum ~~the tantalum~~ precursor and a titanium ~~the titanium~~ precursor are mixed outside of ~~the reactor~~ a reactor and a mixture of the titanium and tantalum precursors ~~the mixed substance~~ is supplied into the reactor.

119. (currently amended) A method for manufacturing a semiconductor memory device, the method comprising:

(a) forming a lower electrode on an upper surface of a semiconductor substrate;

(b) forming a dielectric layer of a oxide film including titanium and tantalum, on an upper surface of the lower electrode; and

(c) forming an upper electrode on an upper surface of the dielectric layer,

wherein, in step (b),~~, the density of titanium in~~ the dielectric layer has a first density of titanium adjacent the lower electrode and wherein ~~depends on the thickness of~~ the dielectric layer has a second density of titanium adjacent the upper electode and wherein the first and second densities of titanium are different;

wherein, in step (b), the first and second densities ~~density~~ of titanium are in the range of ~~is adjusted to be~~ 0.1 to 15 percent;

wherein, in step (b), ~~the tantalum~~ a tantalum precursor and ~~the titanium~~ a titanium precursor are mixed outside of ~~the reactor~~ a reactor and ~~the mixed substance~~ wherein a mixture of the tantalum and titanium precursors is supplied into the reactor;

wherein the tantalum precursor is pentaethoxy tantalum $Ta(OCH_2CH_3)_6$, (PET) and the titanium precursor is tetraethoxy titanium $Ti(OCH_2CH_3)_4$, (TET).

120. (previously presented) The method of claim 118, wherein a density of titanium in the dielectric layer is controlled by the deposition temperature and the flow rate of the precursor.

121. (currently amended) A method for manufacturing a semiconductor memory device, the method comprising:

(a) forming a lower electrode on an upper surface of a semiconductor substrate;

(b) forming a dielectric layer of a oxide film including titanium and tantalum, on an upper surface of the lower electrode in a reactor; and

(c) forming an upper electrode on an upper surface of the dielectric layer,

wherein, in step (b), ~~the density of titanium in~~ the dielectric layer has a first density of titanium adjacent the lower electrode and wherein ~~depends on the thickness of~~ the dielectric layer has a second density of titanium adjacent the upper electrode and wherein the first and second densities of titanium are different;

wherein, in step (b), the first and second densities ~~density~~ of titanium ~~is adjusted to be~~ are in the range of 0.1 to 15 percent;

wherein, in step (b), ~~the tantalum~~ a tantalum precursor and ~~the titanium~~ a titanium precursor are mixed outside of the reactor and ~~the mixed substance~~ wherein a mixture of the tantalum and titanium precursors is supplied into the reactor;

wherein the dielectric layer is formed ~~under~~ at a temperature of 100 to 700° and a pressure of 100 to 760mTorr.

122. (previously presented) The method of claim 121, wherein the tantalum precursor and the titanium precursor are provided at a rate of 5 to 200mg/min and the oxygen gas is supplied at a rate of 10sccm to 10slm.

123. (previously presented) The method of claim 63, wherein the method further comprises applying a thermal process to the dielectric layer under an oxygen atmosphere, between steps (b) and (c).

124. (canceled).

125. (previously presented) The method of claim 78, wherein a density of titanium of the second tantalum titanium oxide film is 10 to 20% percent.

126. (previously presented) The method of claim 78, wherein the reaction suppressing layer is one of a silicon nitride film, a silicon oxide film, and a silicon oxynitride film.

127. (previously presented) The method of claim 126, wherein the reaction suppressing layer is formed by applying one of a rapid thermal nitridation, a rapid thermal oxidation, or a combination thereof to a surface of the lower electrode.

128. (previously presented) The method of claim 126, wherein the reaction suppressing layer is formed by chemical vapor deposition.

129. (previously presented) The method of claim 78, wherein steps (c) and (d) further comprise:

separately supplying a titanium precursor, a tantalum precursor, and oxygen gas into a reactor; and

reacting the titanium precursor, the tantalum precursor, and the oxygen gas with each other within the reactor.

130. (previously presented) The method of claim 129, wherein the tantalum precursor is one of a metal alkoxide such as $Ta(OC_2H_5)_5$, an organometalic such as a metal beta deketonate, and a metal halide such as $TaCl_5$.

131. (previously presented) The method of claim 129, wherein the titanium precursor is a compound such as one of $Ti(OCH(CH_3)_2)_4$, $Ti(OC_2H_5)_4$, $TiCl_4$, and a tetrakis-dimethylamido-titanium (TDMAT).

132. (currently amended) The method of claim 78, wherein, in steps (c) and (d), a tantalum ~~the tantalum~~ precursor and a titanium ~~the titanium~~ precursor are mixed outside of a reactor ~~the reactor~~ and wherein a mixture of the tantalum and titanium precursors ~~the mixed substance~~ is supplied into the reactor.

133. (previously presented) The method of claim 132, wherein the tantalum precursor is pentaethoxy tantalum $Ta(OCH_2CH_3)_6$, (PET) and the titanium precursor is tetraethoxy titanium $Ti(OCH_2CH_3)_4$, (TET).

134. (previously presented) The method of claim 132, wherein a density of titanium in the dielectric layer is controlled by the deposition temperature and the flow rate of the precursor.

135. (previously presented) The method of claim 132, wherein the tantalum titanium oxide film is formed under a temperature of 100 to 700° and a pressure of 100 to 760mTorr.

136. (previously presented) The method of claim 135, wherein, in steps (c) and (d), the tantalum precursor and the titanium precursor are provided at a rate of 5 to 200mg/min and the oxygen gas is supplied at a rate of 10sccm to 10slm.